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ABSTRACT

The relationship between education and the economy is explained by opposing theories--functionalism and conflict. A way of assessing functionalism and conflict theory is to see if increasing educational attainment increases social equality. Higher educational attainment has occurred but has not led to an equal distribution of income. The extent of overeducation, workers with education in excess of job requirements, is a means of evaluating whether occupations are being upgraded at the same rate as educational attainment. Data from a national sample survey conducted in 1984, 1985, and 1986 by the National Opinion Research Center were compared to a Burris (1983) study using similar data from the years 1977-78. Overeducated workers showed a 3.5 percent increase over the years, but greater changes were in worker demographics. Workers with college degrees showed the greatest increase with 20 percent more women, blacks, workers from middle-class backgrounds, and workers 35 years of age and under being overeducated in 1984-86 than in 1977-78. Job satisfaction was examined for overeducation effects. Overeducation was a factor in job satisfaction with the slightly overeducated reporting the least job satisfaction. The findings of the study support the hypothesis that, although more people are acquiring higher levels of education, they are not in jobs comparable to their education. Conflict theorists say this is because of structural inequality in society. (47 references) (KC)

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Overeducation: Job Satisfaction

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ABSTRACT

The relationship between education and the economy is explained by opposing theories--functionalism and conflict. Functionalists see education as contributing to an educated work force. Human capital theory, an economic theory, contained within functionalism states that education is an investment resulting in greater economic productivity, higher status jobs, and increase earnings. Challenges to these concepts come from conflict theorists who believe that education cannot alleviate the inequality which exists in society. A way of assessing functionalism and conflict theory is to see if increasing educational attainment increases social equality.

Higher educational attainment has occurred by has not led to an equal distribution of income. Social mobility has been somewhat upward due to a more favorable occupational structure which needs an ongoing upgrading for its continuance. Extent of overeducation, workers with education in excess of job requirements, is a means of evaluating whether occupations are being upgraded at the same rate as educational attainment.

The extent and distribution of overeducated workers in 1984-86 are compared to 1977-78 (Burris, 1983) using the same national survey data. Overeducated show a 3.5 percent increase but greater changes are in worker demographics. College degreed workers show the greatest increase with twenty percent more women, blacks, workers from middle class backgrounds, and workers 35 and under being overeducated in 1984-86 than in 1977-78. Job satisfaction is examined for overeducation effects. Overeducation is a factor in job satisfaction with the slightly overeducated reporting the least job satisfaction.

The findings of this study support that while more people are acquiring higher levels of education they are not in jobs comparable to their education. Conflict theorists say this is because of structural inequality in society.

INTRODUCTION

Two influential education reports, A Nation at Risk and Action for Excellence "use the public schools as a scapegoat for current economic problems and argue that reforming education is essential for economic improvement" (Spring, 1985, p. 77). The premise that higher levels of education improve the economy is congruent with Shultz's (1971) theory of human capital. This theory states that the knowledge and skills acquired by people, through education, are a form of capital. Therefore, the quality of human effort can be improved which will result in greater productivity. Thus, society will gain a better trained work force from education expenditures. Shultz (1971) also contends that investment in human capital accounts for most of the increase in real earnings. Individuals who defer present income by staying in school will increase their earnings in the future. Education increases skills and knowledge which raises an individual's productivity and thus increases earnings. Rumberger (1985) notes, "the observed relationship between education and earnings simply results from their direct and positive association with the intervening factor, productivity" (p. 1). Schools then are the producers of human capital and industry tends to blame the decline in productivity on the decline in the effectiveness of schools.

The human capital approach to education also strikes a responsive chord with students and parents who see the purpose of education as preparation for jobs. The possibility of higher earnings accruing from higher levels of education has encouraged more people to pursue higher education. However, the issue of "overeducation:" having more schooling than the job requires, is not addressed by industry or the education excellence reports.

Overeducation can be explained as a residual effect of an increased number of people pursuing higher education in an economy which is not expanding high status occupations at the same rate as college graduates are entering the labor force. Randall Collins (1971) sees the "credentialing effect" as the cause of this trend toward overeducation. As higher levels of education are attained by large segments of the population then even higher levels are necessary to maintain one's higher status. "Employers are less and less willing to hire high school graduates because of the ready availability of college graduates or of job applicants with at least some college experience" (DeBevoise, 1983, p. 13). According to Levin (1979), "it appears that young persons with college training will have to accept increasingly those jobs which were filled traditionally by persons with much lower educational attainments" (p. 14).

The concept of overeducation shows the strong relationship which exists between education and the economy. This relationship has developed from a series of changing goals and functions expected by society to be realized by the educational system.

> Probably no other idea seemed more typically American than the belief that schooling could cure society's ills. Whether in the early nineteenth century or the late twentieth century American's have argued for more schooling on the grounds that it would preserve democracy, eliminate poverty, lower the crime rate, enrich the common culture, reduce unemployment, ease the assimilation of immigrants to the nation, overcome the differences between ethnic groups, advance scientific and technological progress, prevent traffic accidents, raise health standards, refine moral character, and guide young people in useful occupations. (Ravitch, 1983, xi-xii)

Since education was to play such a vital part in eliminating unwanted societal conditions, it is understandable that there would be a growth trend in enrollments. However, the rapid expansion of education may be seen as

related to economic factors of the 1930s and 1940s. Compulsory education laws in the 1930s raised the age of compulsory schooling. The child labor laws passed at that time were initiated for economic reasons--to keep young people out of an already depressed labor market. These two laws increased the number of young people in secondary education and consequently the role of education had to change.

Up until this time, high schools had served to prepare graduates for college. The high schools were now in a position of trying to meet the needs of a very diverse population of students. School officials and professional groups of educators started to question whether high schools had diversified the curriculum enough to hold the interest and attendance of all children. High schools took on a special mission in a democratic society: "Rather than serving only the college-bound, the schools had to become an agency of social adjustment for all American youth, guiding them into adulthood and preparing them to enter occupations suited to their needs as well as to society's" (Ravitch, 1983, pp. 10-11).

In 1945, the Harvard Committee addressed the problem of diversity and how schools should be structured to meet the difference in students and their needs as well as society's. It is interesting that while the Harvard Committee promoted the concept of vocational training they put this training within a more general educational context. The Committee did not deny that special education (vocational training) might be necessary for the individual's development but emphasized that general education (liberal arts) should be the central focus of education. The ultimate purpose of education is one's fullest participation in a democratic society (Harvard Committee, 1945).

The advent of universal education for American teenagers raised the question of how to keep more students in school until graduation and how to

increase the numbers going on to college. The Harvard Committee was in response to the former question and the GI Bill resulted in mass higher education which answered the latter question.

As was the case with universal secondary education, the expansion of higher education did not arise solely out of a desire to expand the intellectual development of the citizenry but rather from economic concerns. Postwar federal officials were interested in preventing joblessness and economic distress. To the returning veterans, the GI Bill was a chance to continue their schooling, a chance most of them would not have had without the federal subsidy; to the planners, it was a chance to reduce the number of job seekers (Ross, 1969). Government and educators underestimated the number of veterans who would take advantage of the GI Bill. In 1946, over one million veterans enrolled, doubling the nation's college student population (Ravitch, 1983, pp. 13-14). The success of the veterans in college changed the concept of who should participate in higher education. Mass education was an accepted principle by the mid 1940's and while no one would probably argue with this ideology, have outcomes been promised which cannot be delivered by the educational system?

THE FUNCTION OF EDUCATION IN SOCIETY

Education has been promoted as a means of "getting ahead." It is a means of obtaining a better job, more income, and consequently the avenue to social mobility. Education has been "used" as a possible solution to all the problems which have faced the United States but none has been so vital to the very fabric of this society as social equality. Increased enrollment in higher education flows directly from the belief in equal opportunity through education. "Americans have not only believed in the possibility of upward mobility through education, but have also become convinced that, in a society

which places considerable emphasis on credentials, the lack of the proper degrees may well be fatal to the realization of their aspirations" (Karabel, 1977, p. 233).

According to Thurow (1977), regardless of a person's political ideology there is a consensus about the importance of education as a means of eliminating poverty. The political left sees the inferior education of the poor and minorities as a conscious effort, on the part of the elites, to keep them from competing with better educated groups and to keep them in low-income jobs. The political right argues that the poor are poor because they do not work hard and get the education which is available to them. The moderates use a combination of these arguments: The poor are poor because of inferior schools, but also as a result of background factors (e.g., low aspirations, dysfunctioning families) that keep poor children from benefiting fully from the education available to them. No matter which of these arguments people subscribe to--they all agree that if the poor were better educated, they could get better jobs and higher incomes. Education has become an important dimension of social class and the assumption is that if there is an increase in the overall educational level of society there will eventually be greater equity in the distribution of wealth and power.

How people see the role of education in occupational attainment, stratification, social mobility, and social equality depends on what they see as the function of education in society. Two opposing theories as to the function of education are functionalism and conflict.

Christopher Hurn (1978) states that functionalism offers both an explanation and a justification for the role of educational institutions. Functionalists argue that schools are essential because: "first, schools represent a rational way of sorting and selecting talented people so that the

most able and motivated attain the highest status positions; second, schools teach the kind of cognitive skills and norms essential for the performance of most roles in a society increasingly dependent upon knowledge and expertise" (p. 31).

The functional theory of education is consistent with democratic principles. Our society is based on achievement as a basis for social status rather than inherited (ascribed) status. Achieved status means the society is "open" and through individual achievement there is social mobility and, therefore, all people should have equal access to higher status regardless of ascribed characteristics. The functionalists see "modern society as meritocratic a society where ability and effort count for more than privilege and inherited status" (Hurn, 1978, p. 32). This theory states that there are important and difficult tasks to be performed and efficiency will result if highly qualified people with scarce skills train and perform these tasks.

The concept of the "expert" society is closely related to this allocation function and the concept of efficiency. The "expert" society is: "one that depends preminently on rational knowledge for economic growth, requiring more and more highly trained individuals to fill the majority of occupational positions" (Hurn, 1978, p. 33).

Technological functionalism states that technological change increases the demand for skilled workers. Education functions to either provide these specific skills or the necessary general education upon which the specific skills can be taught. "Seen in this light, the expansion and the increasing differentiation of the education system were inevitable outcomes of technologically determined changes in occupational structure requiring even more intricate skills" (Karabel and Halsey, 1977, p. 9). Human capital theory (Shultz, 1971; Becker, 1975) considers education as an investment in the future

for both individuals and society. Capital in an economic sense is any good which is not consumed directly but increases goods and/or services for the future. Thus, education is capital because society gains a better trained work force from educational expenditures and individuals give up present income by staying in school in order to increase their earnings in the future.

Research in human capital theory has investigated the effect of formal education on earnings in the United States. The basic technique has been to adjust data on the earnings of persons with different amounts of education for other relevant differences between them. "A few studies permit some assessment of the relative importance of ability and education in explaining earning differentials between college and high school persons. By and large, it appears, ability explains only a relatively small part of the differentials and college explains the larger part" (Becker, 1975, pp. 232-233). In human capital theory, education actually develops skills but screening theory sees a different role for education. Taubman and Wales (1974) consider screening as the role of education. "Entry into some high-paying occupations is not free to all, but generally requires that a person of a given skill level also possess a minimum level of educational attainment" (p. 153). In this sense, education is a mechanism for identifying preexisting skills and abilities (Rumberger, 1985). Taubman and Wales (1974) state:

> If screening based on education occurs, then a person with more education earns more income partly because he is allowed to hold a high-paying job. Concomitantly, some people with low educational attainment who also want and could manage the high-paying jobs are excluded from them. Thus, part of the income differential attributed to education arises from an income redistribution due to restricted entry and not to an increase in skills. (p. 153)

Conflict theory as applied to education may be seen as basically a response to what these theorists see as the failure of the schools to produce--greater social equality, social mobility, and equality of opportunity. The conflict theorists see a close link between society and schools but the outcome of schooling is according to what the elites determine. Conflict theorists would contend that one of the most important aspects of the social order is the domination of some groups by others. Therefore, they conclude "schools are serving the interests of elites, as reinforcing existing inequalities, and as producing attitudes that foster acceptance of this status quo" (Hurn, 1978, p. 44).

The conflict theorists disagree with the concept that education is an income equalizer. The proponents of human capital theory see college as the means by which the poor gain the human capital--the skills and training--to climb out of poverty and earn higher incomes (McConnell, 1978). The economic theory of dual or segmented labor markets would be more acceptable to the conflict theorists. The dual or segmented labor market states that there are two types of labor markets with very different characteristics. There is a primary market which has rather high and rising wages, opportunities for advancement, and employment stability. The secondary labor market has low wages, unstable employment, and jobs tend to be "dead-ends." The secondary segment is composed primarily of women, racial minorities, and the young. Once an individual enters the secondary labor market it is very difficult to move into the primary labor market. This theory is a relatively recent development but if empirically validated will help to explain the relationship between education and social equality (Freedman and Maclachlan, 1976; Gordon, 1972; McConnell, 1978; Rumberger, 1981).

Bowles and Gintis (1976) feel that all of the social policies introduced into the educational system to promote equality have been doomed to failure because it is the economic sector (capitalism) which is the root of inequality.

Bowles and Gintis (1976) state that while working people have managed to get more education they only obtain the kind of education they want when it also meets the needs of the economic elites. However, even within the context of more education there is the structure of social control of lower-class students--the extensive need for truant officers and the system of "tracking" and labeling of working-class and minority youth. Therefore a change within the school system will not change the outcome--the economic system must change. They state:"that an equal and liberating educational system can only emerge from a broad-based movement dedicated to the transformation of economic life" (p. 266).

Randall Collins (1971) sees the persistence of inequality in the United States as a result of the schools teaching particular status cultures outside the classroom as well as within. Even if the schools fail to impart technical knowledge it is not important because:

> Insofar as a particular status group controls education, it may use it to foster control within work organizations. Educational requirements for employment can serve both to select new members for elite positions who share the elite culture and, at a lower level of education, to hire lower and middle employees who have acquired a general respect for these elite values and styles. (pp. 1010-1011)

Functionalism and conflict approaches to the function of education in society reach very different conclusions because of their different perspectives of society and the historical context. Functionalists' describe the American society as a democratic society dedicated to equality which can be achieved through education. Thus, inequality is temporary and once everyone

has equal opportunity to (equal) education, economic rewards and social mobility will be based on merit. Therefore, education is the means to the realization of the "American dream." Conflict theorists basically see the education system as a reflection of society--where there is inequality. C. Wright Mills (1953), a conflict theorist, in White Collar gives a possible explanation as to the importance of the historical context in assessing reality. In the early twentieth century there were millions of immigrants coming to this country. Each new ethnic group entered this country at the lowest level of esteem and income, thus raising all previous ethnic groups to a higher level. "Moreover, the expectations of these immigrants, used to their satisfactions and discontents, were not the top of U.S. society, but rather U.S. society versus the homeland; their standards were inter-national rather than inter-class" (Mills, 1953, p. 341). The U.S. was the "land of opportunity" to the immigrants and the 'reality' was a higher standard of living than what had been left behind. "And the increased chance for education, resting upon free institutions and changes in occupational structure, was seen as an American cultural lift, and nourished the feelings of status equality " (Mills, 1953, p. 341).

At the end of World War II there was a level of affluence enjoyed by the largest number of people in the history of the United States--a higher percentage of people "made it" at this time. In the 1950s Mills wrote:

> Many of the historical factors and trends may now be at their historical turning point or even end, but mentalities do not usually keep in lock-step with history. Moreover, the political order itself has not encouraged, and does not encourage a political mentality alert to new realities. (p. 342)

Functionalism represents this time of economic growth and social mobility and confidence in this trend continuing. The late 1960s and 70s were a time of

reevaluation of the "state of the union." The proponents of conflict theory concluded:

> The evils of contemporary society--racism, high levels of inequality, alienation, destruction of the environment, political corruption--are not amenable to liberal social reform or social engineering; they require more fundamental reconstruction. (Hurn, 1978, p. 54)

In order to assess the validity of functionalism or conflict theory, the degree of equality existing in the United States needs to be ascertained. The level of equality in education, and income distribution will be analyzed as part of this assessment.

EDUCATION, INCOME EQUALITY AND SOCIAL MOBILITY

One way to assess equality is through income distribution over a period of time to see if there is equality or a trend in that direction. Since education is supposedly related to occupational attainment which determines income, a low level of income inequality is to be expected at least in the United States. In 1960 the median income of families, expressed in 1982 dollars, was $18,317. The highest median was reached in 1978 at $26,099 and was $23,433 in 1982. The percent of families with incomes below $20,000 fell from 1960 until around 1979. Since 1979 there has been a slight increase in the percent of families with incomes under $20,000 (Statistical Abstract, 1984, p. 463).

If income receivers are divided into five numerically equal groups and the percentage of total personal income received by each is viewed over the years, there have been changes in income distribution. There was a substantial decrease in income inequality between 1929 and 1950. There was a decrease in the percentage of personal income going to the top quintile and an increase in the other four quintiles (Statistical Abstract, 1980). From 1950 until 1969 the relative distribution of incomes remained basically stable. However, from 1969

until 1987 the distribution of income by quintiles has become more unequal. The top 5 percent of income receivers are receiving three times their share and four times the amount received by the bottom twenty percent (McConnell, 1990). So while the evidence points to an improvement in the economic well-being of Americans there is not a trend toward income equality.

The human capital theory explains income variations in a free market economy as a result of differences in productivity. "The poor are poor because their economic productivity is low. They do not have the human capital--knowledge, skills, training, education--to sell to employers in a free market" (DiNitto and Dye, 1983, p. 52). One way of seeing if incomes are a result of education is to compare black and white incomes controlling for education. "If human capital theory operated freely--without interference by discrimination--then we would expect very little difference between blacks and whites at the same educational levels" (DiNittto and Dye, 1983,p. 53). But, unfortunately, this is not the case.

Black incomes as a ratio of white incomes range from a low of 63.5 percent to a high of 84 percent according to educational level. The lowest ratios for Blacks are when there is 1-3 years of high school or college (63.5 and 67 percent respectively). The educational level where black and white incomes show the least differential is a college degree, 84 percent (DiNitto and Dye, 1983, p.53).

The Functionalist theory contends that education is crucial because it creates the skills which bring people into the market. The implications of this theory is that an increase in education of low-income workers will have three very positive effects. First, an educational program which transforms a low-skill individual into a high-skill individual, raises his productivity and consequently his earnings. Second, it reduces total supply of low-skill

workers resulting in an increase in their earnings. Third, it increases the supply of high-skill workers resulting in a decrease in their wages (Thurow, 1977). Lester Thurow (1977) states that if the above theory is accurate then there should be a positive relationship between educational attainment and distribution of incomes. However, when the distribution of education and incomes among white males is compared, education has moved in the direction of greater equality but income distribution has become more unequal (Thurow, 1977). Thurow (1977) concluded from this information that education is a defensive necessity:

> Education becomes a good investment, not because it would raise people's incomes above what they would have been if no one increased his education, but rather because it raises their income above what it will be if others acquire an education and they do not. (pp.332-333)

The macro approach to income equality is rather misleading because it assumes that what is true for individuals is true for society in general. If the median incomes of each level of education are compared, then higher education results in higher median incomes. However, the difference in educational level is not the only difference in these individuals. Jencks (1972) states that approximately 40% of these differences in income can be attributed to the association between schooling, initial ability, and family background. "Neither family background, cognitive skills, educational attainment, nor occupational status explains most of the variation in men's incomes" (Jencks, 1972, p. 226). Besides the problem that education is not the sole cause of income differentials, there is a problem of generalizing the relationship of education to income if most people are obtaining more education. For instance, if blacks and women increase their education but not at a rate

greater than white males, then the income differentials will remain approximately the same.

The available evidence does not support the claim that education necessarily results in income equality. One of the conclusions that is gaining acceptance, is that education can have no substantial equalizing effect in a society that is characterized generally by a high degree of structured social inequality. It is claimed that even if the children of the poor achieve a relatively high level of education, which is unlikely, it will not result in the same benefits as those received by the children of the rich (Farrell, 1982). This macro conclusion does not negate the fact that some individuals as well as certain immigrant groups have been able to use educational institutions as an avenue to higher incomes and social mobility.

A consequence of not upgrading the occupational structure at a time when greater numbers of people are obtaining higher levels of education is overeducation. Over the years there have been many challenges to education but these have been mostly concerned with changes in curriculum, programs, student services, governance, etc. but the concept of overeducation could challenge the value of education itself. Stanley Aronowitz (1973) in False Promises wrote:

> Eighty percent of those entering high school now graduate The number of college graduates exceeds the number of jobs available for which the degree is a prerequisite. The proliferation of youth who have successfully endured school has reached explosive proportions, and there is no room for them either in the teaching profession or the public bureaucracies. These youth find themselves in factories, offices, working as truck or cab drivers or as sales personnel in department stores. They are furious that they have wasted their time and have been oversold about the importance of education, which has not paid off for them in terms of getting them jobs which are significantly better than those of their parents. (p. 407)

As a high school diploma became a universal degree it was replaced with a college degree. In the late 60s graduate school or professional degrees were necessary for higher status positions and a high school diploma became necessary for many manual laboring positions. According to Randall Collins (1971):

> The increasing supply of educated persons has made education a rising requirement of jobs.... Employers have raised their educational requirements to maintain both the relative prestige of their managerial ranks and the relative respectability of middle ranks.... Higher education requirements, and the higher level of educational credentials offered by individuals competing for positions in organizations, have in turn increased the demands for education by the populace. (p. 1015)

Ivar Berg (1971) reports that in interviews with company executives diplomas and degrees were considered a good screening device by which undesirable employment applicants could be identified. They considered credentials as indicators of a personal commitment to "good middle-class values," industriousness, and seriousness of purpose, as well as salutary personal habits and styles. However, Berg states that the available evidence on worker attributes and educational attainment is not always supportive of a positive relationship.

Henry Levin (1979) summarizes the concerns of the Task Force of the Secretary of Health, Education, and Welfare reported in Work in America in regards to overeducated workers:

> The dissatisfactions that result from frustrated expectations with respect to the quality of work and its extrinsic rewards can create threats to productivity in a variety of ways. Most notable among these are rising absenteeism, work turnover, wildcate strikes, alcoholism and drug usage, and deterioriation of product quality. Even rising incidences of sabotage are possible responses by young workers who feel that they are overeducated for the opportunities that have been made available to them and who do not see the possibilities of major improvements in their situation. (p. 14)

Levin also saw the possibility of difficulties for the educational system. He states that a relaxation of educationl standards can be seen through grade inflation at the same time that standardized test scores in basic skill areas have fallen. "As the extrinsic value of education falls in the marketplace, the grades given for any level of effort must rise to ensure a given performance. Moreover, the effort that a student will put in to acquiring an education will also decline as the financial and prestige rewards decline" (p. 16).

Theoretical knowledge about the effects of overeducation poses the possibility of adverse effects being experienced by individuals, the economy, the educational system, and/or society. Some of these possible effects have been researched with some empirical support but not consistent findings. The next section will review the studies on overeducation and analyze the findings.

LITERATURE REVIEW

The degree of overeducation can be ascertained by observing the educational attainment of the labor force and the skill requirements of their jobs. The General Education Development (GED) constructed by the U.S. Department of Labor is a scale which measures the functional or performance requirements of a job. The GED measures the requirements through an objective job analysis of what is necessary and sufficient to achieve average performance in the specific tasks of the job rather than the hiring requirements of the employers or the actual educational attainment of employees. "This method involves analyzing jobs by observing workers performing their jobs and interviewing workers, supervisors, and others who have information pertinent to the job" (U.S. Department of Labor, 1972, p. 12). The GED scale is based on three types of educational development--logical, mathematical, and linguistic. Although this scale was not specifically designed as a summary measure of educational requirements, the GED is the

closest approximation of such measure available and has been widely used for this purpose (Rumberger, 1981, pp. 45-65; Burris, 1983, p. 457). Educational attainment is then translated into GED levels to obtain estimates of the educational requirements of occupations.

Rumberger (1981) studied the distribution of GED levels and educational attainments for employed people in 1960 and 1976. He wanted to see if general skill requirements of jobs in the U.S. economy had changed between 1960 and 1976 and if the educational attainment of the work force changed during this same time period. Rumberger used two conversions of GED levels into equivalent years of schooling with Conversion I being more conservative than Conversion II (see Appendix A for conversion method).

He found that there had been little change in skill requirements from 1960 to 1976. Using Conversion I for educational attainment, overeducation in 1960 was rather slight but had changed considerably in 1976. In 1976, the skill requirements for the lowest three levels of GED were not being matched by educational attainment as education had moved to the highest three levels. This shows that skill requirements of jobs are failing to move upward at the same rate as education.

Comparisons based on Conversion II showed even greater overeducation. While 1960 showed a fair degree of overeducation, workers with higher levels of educational attainment in 1976 were very overeducated for the skill requirements of their jobs. One factor which is influencing the educational attainment levels are the number of older workers with less than a high school education leaving the labor force. As secondary education has become nearly universal, almost everyone in the future work force will have completed 11 or 12 years of schooling. However, skill requirements of jobs are

not moving upward at the same rate. Rumberger concluded that about 40% of all college educated workers in 1976 were overeducated for their jobs.

Rumberger then computed the incidence of overeducation by sex and race. Conversion I was used for equivalent years of schooling, which may present a conservative estimate of overeducation.

White males and females were better represented in the higher-skilled jobs than either black males or females. Blacks were more highly represented in lower-skilled jobs. The GED levels did not change greatly between 1960 and 1976 but there were upward shifts in educational attainment for all groups. Blacks made real increases in educational attainment for high school diplomas and higher education. Women tended to show the most overeducation in terms of the number at the highest educational attainment compared to the percentage holding the higher-skilled jobs.

Overeducation seems to exist for all groups but whites with higher educational attainment are better represented in the higher-skilled jobs than blacks. Overeducation seems to have increased since 1960, partly because of the increase in educational attainment since 1960.

Researchers prior to Rumberger also found overeducation existed in the labor market (Miller, 1971; Lucas 1972; Berg, Freedman, and Freeman, 1978). A primary concern about overeducation is the potentially disruptive and adverse consequences in the workplace. The most plausible result of overeducation would be workers' job dissatisfaction.

Quinn and Baldi de Manditovitch (1980) did secondary analyses on data obtained in 11 national surveys of the work force conducted between 1962 and 1977. They examined: (a) level of education and overall job satisfaction; (b) level of education and satisfaction with more specific aspects of the job; and, (c) relative level of education and overall job satisfaction. There were two

types of job satisfaction measures employed. "Facet-free satisfaction was based on very general questions... (e.g., All in all how satisfied are you with your job?) Facet-specific satisfaction was based on questions that referred to specific aspects of jobs (e.g., How satisfied are you with the hours you work?)" (Quinn and Manditovitch, 1980, p. 101).

In analyzing the levels of education and overall job satisfaction, the relationship was modest. The most consistent pattern was little or no relationship between educational level and job satisfaction up to the level of 'some college,' beyond which there was an increase in satisfaction. There was "no relationship" at the lower levels of education and a "credentials" effect occurred at the college level. "All but one of the surveys analyzed indicated that in terms of job satisfaction, there was no payoff from having college training unless one also received a college degree" (Quinn and Manditovitch, 1980, p. 105).

When determining job satisfaction in terms of specific aspects of jobs, education was significantly and positively related to satisfaction in only two of the six aspects--challenge and financial rewards. The relationship between education and challenge (specific aspect) was greater than that between education and overall job satisfaction.

The relative level of education and overall job satisfaction was measured according to the level of education which was appropriate to a worker's job. In previous research, the studies which tended to find a negative relationship between education and job satisfaction used occupationally homogeneous samples. The studies which showed a positive relationship used occupationally heterogeneous samples.

The researchers used four measures of relative level of education and overall job satisfaction. These included: (1) GED (General Educational

Development); (2) worker's own estimate of how many years of education are needed for his or her job; (3) median years of education attained by others in the worker's occupation, as indicated in the 1970 census; and, (4) the median years of education attained by others in a person's work group. Education expressed in relative terms was a better predictor of job satisfaction than absolute level of education. The only measure of relative education that was not significant for job satisfaction was the median number of years of education of those in the worker's occupation.

Dissatisfaction with one's job was one directional--when a worker was too highly educated for his or her job. The undereducated were well satisfied with their jobs. The authors concluded that overeducation may present a real problem in the future as the average education level is increasing. If job demands do not increase in proportion to educational increases, a larger work force which is dissatisfied is a likely consequence.

Glenn and Weaver (1980) researched the relationship between education and job satisfaction. The authors were interested in the fact that previous research had consistently failed to find a strong positive relationship between amount of education and job satisfaction, and some research had not found a positive relationship at all. An explanation for the lack of a strong positive relationship is that education could have negative effects on job satisfaction. If college increases job expectations and aspirations more than one's ability to attain such a job, then education could contribute to job dissatisfaction.

Glenn and Weaver hypothesized that: (1) the total effect of education on job satisfaction would be positive and (2) the net effect of extrinsic rewards would be negative. The extrinsic reward variables were: personal earnings for the previous year, occupational prestige, job autonomy, and job authority.

The sample consisted of 2,086 respondents, 1309 white males and 777 white females who were employed fulltime.

They estimated the total effect of education by controlling variables likely to affect both education and job dissatisfaction. The control variables were selected on the basis of exploratory research and their prior knowledge that age is associated with both education and job satisfaction. The only control variable which emerged as statistically significant was religious preference. Protestants generally reported more job satisfaction and this relationship was statistically significant for men when all control variables were in the regression equation.

The hypothesis that the total effect of education will be positive was supported. The estimated effect for men was quite small but the estimated effect for women was substantial in relation to the effect for men. The hypothesis that the effect of education on net of extrinsic work rewards is negative was supported for men but not for women (the magnitude of the effect was very small). The authors concluded that the payoff of education in job satisfaction seems to be through the extrinsic work rewards for both men and women. For men, the effect seemed to be through all four of the reward variables, but for women it was basically through earnings and occupational prestige. For women, whether they were supervised on the job or whether they supervised others seemed to have no effect on their job satisfaction.

The researchers felt that their findings were consistent with earlier conclusions that the payoff in job satisfaction from education is quite modest on the average, and that all or most of that payoff is through earnings, occupational prestige, and, in the case of men, job autonomy and authority. However, these findings do not support the widespread belief that education which does not lead to extrinsic work rewards is a source of a great deal of

dissatisfaction with work. Actually, education seems on the average to have little direct effect on job satisfaction, either positive or negative.

These researchers in a related study (1981) had estimated the effects of education on several dimensions of the psychological well-being of men and women. The positive effect of a college education was greater for women than men. The results of these two studies would seem to indicate that women have generally been getting a greater payoff in satisfaction and well-being from their education than have men.

Greg Duncan and Saul Hoffman (1981) examined the extent and economic effects of overeducation. In determining the extent of overeducation, they analyzed self-reported formal educational requirements of jobs currently held by respondents. The data used were from the Panel Study of Income Dynamics (1976), a longitudinal survey of a representative national sample of over 5,000 households. They found that about 46 percent just met the educational requirements of their jobs, with 42 percent having more education than their jobs required. The other 12 percent had less education than their jobs required--a result of job requirements being upgraded since the respondent obtained the job or individuals who attended some high school being in jobs requiring a high school diploma. Black men reported the highest level of overeducation--48.5 percent.

This study found the largest amount of surplus education among semiskilled and unskilled blue-collar workers (55-60 percent). The occupations with the least amount of surplus education were professionals, managers, and clerical workers. Even though the concern about overeducation has concentrated on college graduates, this study found that college graduates, along with high school graduates, were the least likely to have surplus education. The workers reporting the greatest amount of surplus

education are workers with less than a high school diploma (56 percent); some college education (67 percent); and, post college degrees (60 percent).

The next phase of the research was to determine if there is any economic value derived by the individual from these years of excess education The assumption being that if wages reflect productivity, and wages increase with surplus education than overeducation increases productivity. The findings seemed to show that wages are not determined solely on the basis of educational requirements. Surplus education had a positive and significant effect on wage rates for males, females, blacks, and whites. The additional annual wage rate ranged from 3 percent for white men to 5.2 percent for white women. However, while surplus education resulted in higher wages the increase was only half that of required education. Men who held jobs for which they were undereducated earned less than otherwise similar men. For each additional year of deficit education, white men annually earned 4.2 percent less and black men earned 4.8 percent less.

Finally, since most of the concern about overeducation has centered around workers under 35 years of age, Duncan and Hoffman did further analysis with this group. Wages did fall somewhat for surplus education but remained significant at the 1 percent level for all but white men (wages for white men were significant at the 10 percent level). The effects of deficit education increased with this sample of younger people, "indicating a larger wage penalty for workers with less than the required education level" (Duncan and Hoffman, 1981, p. 85).

Rumberger (1985) examined the impact of education on individual productivity and earnings comparing those workers with required education to those who are overeducated. The data were from three surveys, the 1969 Survey of Working Conditions and the 1973 and 1977 Quality of Employment

Surveys. These surveys were personal interviews of approximately 1500 working Americans in a cross section of occupations and industries. Two measures of the level of education required in the respondent's job were employed. A subjective measure was established by asking each respondent the amount of schooling that he or she thinks the job requires. For the 1973 survey, the GED level of each occupation was available and considered an objective measure of the level of education required for respondent's job.

For the three survey years, between 27 and 35 percent of all workers reported that they had one or more years of surplus schooling and between 12 and 17 percent reported surplus education in excess of three years. In 1973, where there was an objective measure, 57 percent of all workers were found to have surplus schooling compared to 27 percent on the subjective measure. Using the objective measure, the highest incidence of surplus schooling was among operative and service workers and the lowest among craft workers.

Earnings for surplus schooling, for both males and females, were almost half the estimated returns to required schooling. The estimates for both objective and subjective measures of required schooling resulted in similar results. "These estimates support the proposition stated earlier that schooling in excess of that required by a worker's job may be underutilized and therefore rewarded less than the schooling actually required and fully utilized" (Rumberger, 1985, p. 9). Women received a higher return for surplus schooling than men which is consistent with the Duncan and Hoffman (1981) study.

Rumberger also looked at occupations to see if these findings are consistent across occupations. It was found that schooling is not rewarded in the same way in all occupations. Additional schooling in some occupations, even if required for the job, does not lead to higher earnings (e.g., craft and

operative occupations). Additional schooling beyond that required for the job is not rewarded either and where it is rewarded--it is at a lower rate than required schooling. The fact that occupations reward schooling, both required and surplus, differently may be because organizational structure is an intervening factor. There is the possibility that firms differ greatly in how they structure jobs and how they make use of the skills and abilities that workers bring to their jobs. Rumberger concluded that the relationship between education and earnings is more complex than has beeen generally assumed.

Val Burris (1983) researched the social and political consequences which have been attributed to overeducation. He examined the following assumptions: overeducated workers can be expected to exhibit higher levels of job dissatisfaction, increased tendencies toward political leftism, greater political alienation, and a weaker allegiance to the dominant achievement ideology than workers with comparable occupations or levels of education.

Burris's data (N=1534) came from a national sample survey conducted in 1977-78 by the National Opinion Research Center of the University of Chicago. Estimates of the educational requirements of jobs were made using the scale of General Education Development (GED). Approximately 21.7 percent of full-time workers in 1977-78 were overeducated in their current jobs. The greatest concentration of overeducated workers were not found among the college graduates--the group which has received the most attention in the literature--but at the middle levels of educational attainment. Approximately 37.7 percent of workers with 13-15 years of schooling were employed in occupations requiring no more than a high school education. Approximately thirty-one percent (30.9) of workers with 16 years of education were in jobs which did not require a college degree.

Except for a high school diploma and B.A. degree, women tended to be more overeducated than males. Except for the college degree, blacks were more overeducated than whites. At every level of education people from working-class backgrounds had higher levels of overeducation than persons from middle-class backgrounds. Younger workers had higher rates of overeducation at every level of educational attainment. However, the smallest difference between those under 35 and those over 35 is at the college degree level. This tends to disprove the view that overeducation is a result of the increase in college graduates. This would suggest that overeducation is a result of people attending junior college and/or those completing less than four years and being in jobs requiring a high school diploma, as well as an increase in post college training without any occupational gain.

When the rates of job dissatifaction of overeducated workers were compared with those of the workers in equivalent occupations, there is dissatisfaction among the overeducated but not as much as when viewed independently. The researcher concluded that while high levels of overeducation seem to be associated with a decline in job satisfaction, moderate levels of overeducation need not produce the same results.

This study did not support the hypothesis of a positive relationship between overeducation and political leftism. The overeducated tended to be more liberal but no more so than is generally found for higher educated workers at all occupational levels.

There was no support for the hypothesis of a positive association between overeducation and political alienation. There was some evidence that overeducated workers are less supportive of the achievement ideology than nonovereducated workers. The same results were found for the achievement ideology as for job dissatisfaction, extreme levels of overeducation may cause

disaffection but moderate levels of overeducation do not produce the same results.

Burris concluded that moderate levels of overeducation have such a small effect because workers do not subjectively perceive themselves as overqualified for their jobs. "Whether individuals will experience themselves as overeducated therefore depends less on the objective match between the skills they have learned and those which they use on the job than it does on the socially prevailing norm as to the 'appropriate' level of education for their occupation. It is therefore not surprising that objective measures of overeducation are so weakly correlated with worker attitudes, particularly at the moderate levels of overeducation" (Burris, 1983,p. 465).

Herbert Smith (1986) in a review of the literature on overeducation feels that it is unclear whether overeducation or underemployment among college graduates constitutes a social problem. This study showed that while incomes of college graduates fell sharply in the first half of the 1970s they have since rebounded. Smith (1986) summarized the current and the future state of affairs thusly, "A college education was once sufficient for the attainment of a good job. It is clearly no longer sufficient, but at the same time, it is all the more necessary" (p. 95). While many college graduates in the 1980s are occupationally mismatched relative to the modal occupation--specific levels of education in the 1960s--does it follow that they are underemployed relative to their aspirations, expectations, and abilities?

In summary, all the previous studies have found overeducation rates of varying degrees. A possible reason for the varying rates is due to the use of different conversions of GED levels into equivalent educational levels as an objective measure of overeducation. Also some studies have used subjective measures--where the respondents report their level of overeducation. One of

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the real differences reported in these research studies is how overeducation is distributed according to occupations and level of educational attainment. A consistent finding has been that women, blacks, and younger workers tend to experience higher rates of overeducation than their comparable counterparts. Job dissatisfaction as well as other adverse effects have not been consistently found among overeducated workers. Part of the present study will be to replicate some of the Burris (1983) research so that trends may be determined through the use of comparable methods and data. Comparisons of extent and distribution of overeducation and job satisfaction will be made.

Other areas were also considered in the original study which will not be included in any detail in this paper (Jenkins, 1988). It was expected that overeducated workers would feel more secure in their jobs but would be experiencing some degree of disillusionment with the educational system i.e., less confidence in leaders of educational institutions, less supportive of additional funds to improve education, and less supportive of increasing opportunities for people to go to college (Jenkins, 1988). However, there was no support for overeducated workers feeling greater job security. There was no consistent support for overeducated workers having less confidence in leaders of educational institutions or being less supportive of funds to improve education. However, overeducated were less likely to be supportive of increasing opportunities for people to go to college and this was especially true for those workers with higher levels of educational attainment (Jenkins, 1988).

The hypothesis to be explored in this paper is:

> Overeducated workers will be less satisfied with jobs than workers who are not overeducated.

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The demographic variable to be considered in relation to job satisfaction will be gender.

DATA AND MEASUREMENT

The data for this study came from a national sample survey conducted in 1984, 1985, and 1986 by the National Opinion Research Center (NORC) of the University of Chicago. The total probability sample for these three years consisted of 4,477 English-speaking persons 18 years of age or over, living in non-institutionalized settings within the United States. Since this study was concerned with the relationship between occupation and education, analysis was resistricted to those respondents who were employed full-time and for whom complete data on occupation and education were available. The number of cases which met these conditions for each of the years were: 701 for 1984, 740 for 1985, 693 for 1986 resulting in a total sample of 2134 respondents.

The degree of overeducation was ascetained by converting GED scores into educational equivalents (see pages 16-17 for discussion of how the GED level relates to estimates of educational requirements of occupations). The GED level by occupational classification for each respondent was included in the NORC data set. Lloyd Temme (1986) constructed the GED levels reported in the NORC codebook. He utilized the 1971 Current Population Survey (CPS) which was coded with both the detailed Census and DOT (Dictionary of Occupational Titles) occupation codes. He summed and averaged all responents' DOT scores within each detailed Census category and applied the CPS weights for each case. This resulted in weighted average DOT data scores for each Census occupation which are representative of the national population.

To obtain estimates of the educational requirements of occupations, GED scores were converted into educational equivalents according to the following formula:

GED	Educational Requirements
1, 2	0-11 years
3	12 years
4	13-15 years
5	16 years
6	over 16 years

Respondents whose actual educational level was higher than the GED for their occupation were considered overeducated. The conversion of GED scores and educational requirements was consistent with the formula used by Burris (1983). This allowed for a comparison between the extent and distribution of overeducation found by the Burris study using 1977-78 data and this study using 1984-86 data. This conversion was more conservative than those utilized by previous studies (Eckhaus, 1964; U. S. Department of Labor, 1971; Rumberger, 1984) and should minimize the number of workers classified as overeducated. This conversion formula was also congruent conceptually with natural educational levels and degrees.

It is recognized that there are some real shortcomings in the assumption that a GED level can be assigned to an occupation which will reflect the formal education required for average job performance. Occupations are general categories consisting of specific jobs but are assigned a single GED level as though they all required the same educational requirement. Educational attainment is also treated as though educational outcomes are the same based solely on the years of education completed. Individuals may start their work careers with the necessary education but through on-the-job training and tenure be promoted or obtain a job which would require a higher educational

level for an entry level worker with no experience. However, one method of measuring overeducation is through the actual schooling acquired by workers in excess of the educational requirement of occupations using the GED score assigned to occupational classification. This method has been widely used in the literature on overeducation (Eckhaus, 1964; Rumberger, 1981; Burris, 1983; Rumberger, 1985).

METHOD OF ANALYSIS

The initial analysis of this data determined the pattern of educational and occupational attainments of full-time workers in this survey. Occupations were converted into educational requirements necessary to perform the job and actual educational attainment of the worker were converted into the same scale as occupations. The scale consisted of five levels: 0-11 years of education, 12 years of education, 13-15 years of education, 16 years of education, and 17+ years of education. Percentage of workers within each educational attainment level according to educational requirements of their current jobs were calculated. The percentage distribution of the educational attainments of workers by the educational requirements of their current jobs were compared to the 1977-78 data (Burris, 1983) in order to determine the amount of change during the last seven to eight years. This method also revealed the percentage of overeducated workers within each educational attainment level and occupational grouping.

Percentage of overeducated workers by sex, race, class background, and age within educational levels were calculated. The workers with 0-11 years of educational attainment were not a part of this analysis as they cannot be overeducated. These percentages were compared to the 1977-78 data (Burris, 1983) to determine if there had been changes in categories of overeducated workers.

Two methods were used to determine the effects of overeducation on each dependent variable. Percentages were used to compare the responses of overeducated workers with workers who were not overeducated. This method also allowed for comparisons of worker responses within equivalent occupations and within equivalent educational attainment levels. However, while this showed the differences in responses according to workers' educational level and education required by their occupation, these differences could have been the result of education and occupation operating independently of one another. Therefore, regression was used in order to control for education and occupation. A least-squares equation was calculated to predict the rates of the dependent variables from the additive model. The independent variables of education and occupation were converted to dummy variables for each level of education and occupation. An additive model was developed and the deviations from predictions measured. The deviations (residuals) were considered as the interaction effects of education and occupation. The size and direction of the residuals were analyzed as a measure of how overeducation impacts on the dependent variables (Jackson and Burke, 1965; Burris, 1983).

RESULTS

Extent and Distribution of Overeducation

The first area to be considered is the degree of overeducation in the survey of full-time workers in 1984-86 and to compare these findings with 1977-78 full-time workers (Burris, 1983). Table 1 shows the percentage of workers according to their educational attainment by the educational requirements of their occupation for 1984-86. The table is constructed so that if a diagonal line is drawn from the upper left-hand corner to the lower right-hand corner the cells intersected represent workers whose educational attainment is consistent

with the educational requirements of their current jobs. The figures below (to the left of) the diagonal line represent the percent of workers whose educational attainment is in excess of the educational requirements of their occupation and are therefore considered overeducated. The figures above the diagonal (to the right) represent the percent of workers whose educational attainment is less than the educational requirement of their current occupation and are considered undereducated.

The percent of full-time workers in the 1984-86 survey considered overeducated for their jobs is 25.2. This is an increase of 3.5 percent of overeducated workers compared to that reported in the 1977-78 survey (Burris, 1983). While the total number of overeducated is only 3.5 percent higher, there are changes in how the overeducated are distributed by educational attainment level.

TABLE 1. EDUCATIONAL ATTAINMENT OF WORKERS BY EDUCATIONAL REQUIREMENTS OF OCCUPATION BY PERCENTAGES, 1984-86[a]

Educational Attainment of Worker	Educational Requirements of Occupation					
	0-11 years	12 years	13-15 years	16 years	17+ years	Total
0-11 Years	3.3% (71)	7.5% (160)	5.0% (107)	0.8% (18)	0.0% (0)	16.7% (356)
12 Years	3.1 (66)	11.7 (249)	16.0 (342)	3.7 (78)	0.2 (4)	34.6 (739)
13-15 Years	0.7 (15)	5.9 (126)	10.3 (219)	5.2 (110)	0.3 (6)	22.3 (476)
16 Years	0.1 (2)	2.0 (43)	4.3 (92)	6.2 (133)	0.9 (19)	13.5 (289)
17+ Years	0.0 (1)	0.6 (12)	2.3 (49)	6.2 (132)	3.7 (80)	12.8 (274)
Total	7.3 (155)	27.6 (590)	37.9 (809)	22.1 (471)	5.1 (109)	100.0 (2134)

[a] Ns in parentheses

The present study shows a direct relationship between educational attainment and percent of overeducation. Workers with one or more years of graduate education employed in jobs requiring a college degree or less have a rate of 70.8 percent of overeducation (194 of 274). Workers with a college degree have the next highest level of overeducation--47.4 percent are in occupations which require less than a college degree. This is an increase of 16.5 percent over the college degreed worker found by Burris in 1977-78. In 1977-78, the greatest concentration of overeducated workers were those with 13-15 years of educational attainment. The percent of overeducation for this middle level of educational attainment in 1984-86 is 29.8--a decrease of 7.9 percent from 1977-78. Workers with a high school degree are showing a reverse situation in that 57.4 percent are undereducated for their jobs.

The distribution of workers by educational attainment according to educational requirements of occupations has changed from the 1977-78 survey (Burris, 1983). Table 2 shows the percentage of workers according to educational attainment and educational requirements of occupations in 1977-78 compared to the 1984-86 survey and the percentage of change.

Table 2 shows that there has been a decrease in workers at the three lowest levels of educational attainment and an increase in workers with college degrees and graduate education. There is also a change in the percentage of workers by occupational groupings. Those occupations requiring 0-11 years of education and 12 years of education have fewer workers in 1984-86 then in 1977-78. Occupations requiring 13-15 years of education have 10 percent more workers in those jobs in 1984-86 than in 1977-78. Occupations requiring a college degree or graduate education show very small changes which explains

the increase in overeducated workers at higher levels of education as the increase in educational attainment has been at these levels.

TABLE 2. EDUCATIONAL ATTAINMENT OF WORKERS BY EDUCATIONAL REQUIREMENTS OF OCCUPATION IN 1984-86 COMPARED TO 1977-78 BY PERCENTAGES

	Educational Requirements of Occupation					
Educational Attainment of Worker	0-11 Years	12 Years	13-15 Years	16 Years	17+ Years	Total
0-11 Years						
1977-78	5.1%	11.7%	4.5%	1.8%	0.0%	23.2%
1984-86	3.3	7.5	5.0	0.8	0.0	16.7
Difference	-1.8	-4.2	+0.5	-1.0	0	-6.5
12 Years						
1977-78	5.0	15.3	12.6	5.0	0.2	38.0
1984-86	3.1	11.7	16.0	3.7	0.2	34.6
Difference	-1.9	-3.6	+3.4	-1.3	0	-3.4
13-15 Years						
1977-78	1.0	6.1	7.3	4.1	0.3	18.8
1984-86	0.7	5.9	10.3	5.2	0.3	13.5
Difference	-0.3	-0.2	+3.0	+1.1	0	-5.3
16 Years						
1977-78	0.3	1.0	1.8	5.6	1.2	9.9
1984-86	0.1	2.0	4.3	6.2	0.9	13.5
Difference	-0.2	+1.0	+2.5	+0.6	-0.3	+3.6
17+ Years						
1977-78	0.0	0.6	0.8	5.1	3.6	10.0
1984-86	0.0	0.6	2.3	6.2	3.7	12.8
Difference	0	0	+1.5	+1.1	+0.1	+2.8
Total						
1977-78	11.3	34.7	26.9	21.6	5.3	100.0
1984-86	7.3	27.6	37.9	22.1	5.1	100.0
Difference	-4.0	-7.1	+10.0	+0.5	-0.2	0

Whether or not the rates of overeducation are influenced by intervening variables such as sex, race, class background, and age are presented in Table 3.

TABLE 3. PERCENTAGE OF OVEREDUCATED WORKERS AT EACH LEVEL OF EDUCATION BY SEX, RACE, CLASS BACKGROUND, AND AGE OF WORKERS, 1984-86[a]

Educational Attainment of Worker	Category Of Worker: Sex		Race		Class Background		Age Level		Total
	Male	Female	White	Black	Middle class	Working class	35 & under	Over 35	
12 Years	11.7% (393)[b]	5.8% (346)	8.6% (652)	11.6% (87)	7.8% (243)	9.5% (496)	11.6% (362)	6.4% (377)	8.9% (739)
13-15 Years	30.2 (245)	29.0 (231)	27.9 (408)	39.7 (68)	32.3 (217)	28.6 (259)	32.9 (249)	25.9 (227)	29.8 (476)
16 Years	44.0 (175)	52.6 (114)	47.1 (265)	50.0 (24)	49.1 (167)	45.9 (122)	54.0 (148)	40.4 (141)	47.4 (289)
17+ Years	61.5 (174)	87.0 (100)	72.2 (248)	57.7 (26)	72.3 (173)	69.3 (101)	83.2 (101)	64.2 (173)	70.8 (274)
Total	25.3 (1200)	25.1 (934)	25.7 (1841)	21.8 (293)	32.2 (904)	20.1 (1230)	29.3 (978)	21.6 (1156)	25.2 (2134)

[a] Percentages are overeducated for that cell
[b] Ns in parentheses are total Ns for that cell

Males and females show approximately the same total rate of overeducation but there are differences according to educational attainment. Males show the greatest amount of overeducation, in relation to females, at the 12 years of education level. Burris (1983) concluded that women high school graduates are able to obtain low-level white-collar occupations which require the skills taught in high school, while males are more likely to obtain unskilled or semi-skilled manual jobs. However, women have much higher rates of overeducation at the college and graduate education levels.

Previous research has consistently shown that blacks have a higher rate of overeducation than whites (Duncan and Hoffman, 1981; Rumberger, 1981; Burris, 1983). Table 3 shows this trend is not true for this survey, and is a result of the rate of overeducation moving in opposite directions for black and whites. Some college education (13-15 years) resulted in greater overeducation for blacks than for whites. However, more education seems to benefit blacks more than whites, blacks show approximately the same rate of overeducation as college graduates but blacks with graduate education who are overeducated are 14.5 percent lower than similarily educated whites.

Class background needed to be considered as an intervening variable because conflict theory would contend that individuals from working class backgrounds do not realize the full benefits of education in the labor market (Bowles and Gintis, 1976; Collins, 1971). Class background was determined by the father's occupation using the same categories established by Burris (1983) for comparison purposes. Professional and Managerial occupations were classified as "middle class" and all others as "working class." Except for the workers with 12 years of educational attainment, the working class have less overeducated workers than the middle class. However, more of the middle class

group have obtained much higher levels of education which makes the total for this category rather misleading.

The expected trend of overeducation according to age is found. Younger workers have higher rates of overeducation at every level of educational attainment. The difference in rates of overeducation between the 35 and under compared to the over 35 increases as educational attainment increases. This would tend to support the view that overeducation is a result of more people obtaining higher levels of education. Younger workers are also just starting on their career ladder and would be expected to show less overeducation with age.

The overall rates of overeducation by categories from 1977-78 to 1984-86 have not changed by any large percents; however, a different picture is evident when the categories are viewed at each level of education. Table 4 shows the changes in overeducation which have occurred by sex, race, class background, and age at each level of education in the last seven to eight years.

High school graduates show an overall decrease in overeducation of 4.1 percent. This decrease is seen in every category except for those individuals from middle class backgrounds where there has been a slight increase. Workers with 13-15 years of education are showing a reduction of 7.9 percent in the rate of overeducation. If this group were a smaller percentage of the total now than in 1977-78, a possible explanation would be that these individuals are returning to college for a four-year degree. However, this group was 18.8 percent of the total in 1977-78 and is 22.3 percent of the total workers by educational attainment in the 1984-86 survey. This would seem to show a change in employment practices or when viewed with the increase in

college educated workers it may be showing strong support for the "credential effect."

The two highest levels of education are showing an increase in rates of overeducation. College graduates show increases from 11.2 percent up to 23.8 percent by category and an overall increase of 16.5 percent across categories. The number of overeducated females has increased at a greater rate than the males from the 1977-78 survey. This could be a result of more women entering the labor force and having to increasingly accept jobs for which they are overqualified. Within categories the largest increases are for females, blacks, middle class, and workers 35 and under. This can be a reflection of the increasing numbers of people obtaining a college degree as well as blacks and women still needing to be overqualified in order to be employed. Workers with graduate education are showing an increase of 6.6 percent of overeducated workers. Blacks are the only within category group showing a decrease (post graduate) in the rate of overeducation which may be a result of affirmative action at this educational level.

Table 4 shows a real shift in categories of workers who are overeducated. The two lowest educational levels, 12 years and 13-15 years, have decreased while the two highest levels, 16 years and 17+ years, have increased. The largest shifts, both increases and decreases, have basically been for women, blacks, middle class, and workers 35 and under. The only exception to this is the decrease of 11.3 percent of working class with 13-15 years of education and workers over 35 with graduate education.

TABLE 4. PERCENTAGE OF OVEREDUCATED WORKERS AT EACH LEVEL OF EDUCATION BY SEX, RACE, CLASS BACKGROUND, AND AGE OF WORKER IN 1984-86 COMPARED TO 1977-78 DATA WITH DIFFERENCES BY CATEGORY

	Category of Worker								
Educational Attainment of Worker	Sex		Race		Class Background		Age Level		
	Male	Female	White	Black	Middle class	Working class	35 & under	Over 35	Total
12 Years									
1977-78	18.1%	6.9%	12.8%	15.3%	6.5%	12.8%	15.1%	11.0%	13.0%
1984-86	11.7	5.8	8.6	11.6	7.8	9.5	11.6	6.4	8.9
Difference	-6.4	-1.1	-4.2	-3.7	+1.3	-3.3	-3.5	-4.6	-4.1
13-15 Years									
1977-78	34.6%	41.7%	33.0%	63.6%	27.4%	39.9%	43.9%	29.3%	37.7%
1984-86	30.2	29.0	27.9	39.7	32.3	28.6	32.9	25.9	29.8
Difference	-4.4	-12.7	-5.1	-23.9	+4.9	-11.3	-11.0	-3.4	-7.9
16 Years									
1977-78	32.0%	28.8%	31.6%	26.3%	28.6%	34.6%	32.6%	29.2%	30.9%
1984-86	44.0	52.6	47.1	50.0	49.1	45.9	54.0	40.4	47.4
Difference	+12.0	+23.8	+15.5	+23.7	+20.5	+11.3	+21.4	+11.2	+16.5
17+									
1977-78	56.0%	84.4%	63.9%	70.0%	59.4%	66.7%	75.0%	54.9%	64.2%
1984-86	61.5	87.0	72.2	57.7	72.3	69.3	83.2	64.2	70.8
Difference	+5.5	+2.6	+8.3	-12.3	+12.9	+2.6	+8.2	+9.3	+6.6
Totals									
1977-78	22.7%	20.1%	20.8%	27.1%	28.3%	19.6%	27.4%	16.3%	21.7%
1984-86	25.3	25.1	25.7	21.8	32.2	20.1	29.3	21.6	25.2
Difference	+2.6	+5.0	+4.9	-5.3	+3.9	+0.5	+1.9	+5.3	+3.5

Job Satisfaction

The first method used to determine the effects of overeducation on the dependent variable of job satisfaction was to compare responses of workers according to educational attainment and educational requirements of occupations. The percent of workers who responded they were "very satisfied" with their jobs was 48.5. Of the remaining 51.5 percent; 38.4 were "moderately satisfied," 9.7 percent were "a little dissatisfied," and 3.4 percent were "very dissatisfied." Table 5 shows the percent of workers who are "very satisfied" with their jobs by educational and occupational level. The highest rates of job satisfaction are found for those who are undereducated for their jobs--upper right-hand side of the table. The lower rates of job satisfaction do not follow as consistent a pattern but tend to be in the occupations with low educational requirements. If rates of job satisfaction are averaged along each of the seven diagonals (i.e., for workers with equivalent levels of overeducation measured in GED units) the following pattern between degree of overeducation and job satisfaction is found (Burris, 1983)

Percent Satisfied	Level of Overeducation
76.4	-3
52.7	-2
54.0	-1
48.3	0
38.2	+1
44.7	+2
41.7	+3

The 0 is the middle diagonal (upper left-hand corner to lower right-hand corner) which represents those workers whose educational attainment is consistent with the educational requirements of their job. The negative numbers represent the undereducated workers by either a single GED level,

two GED levels or three GED levels (three diagonal lines to the right of the middle diagonal). The positive numbers are the overeducated by either a single GED, two GEDs, or three GED levels.

The undereducated show the highest levels of job satisfaction but the overeducated do not show the expected trend. Burris (1983) found the greatest amount of job dissatisfaction among those who were the most overeducated (+3) and this survey shows the greatest discrepancy between the moderately overeducated (+1). This could be a function of the intervening variable age or in the increase in college degree workers who are overeducated.

Since the lowest rates of job satisfaction are found for the lower level occupations (in terms of educational requirements) the percent of job satisfaction of overeducated and those not overeducated within occupations is shown at the bottom of Table 11. The -6.3 difference for occupations requiring 0-11 years of education was expected and only slightly higher than the -4.6 which Burris (1983) found in the 1977-78 survey. The large shifts in job satisfaction between the 1977-78 and 1984-86 surveys are in occupations requiring either 13-15 years or 16 years of education. The difference in job satisfaction between 'overeducated' and 'not overeducated' in 1977-78 for occupations requiring 13-15 years of education was -6.9 and 0.0 for occupations requiring 16 years of education. Because of the differences found in the extent and distribution of overeducated workers, undereducated workers, and job satisfaction rates from the Burris data, it was decided that the 1984-86 data needed to be analyzed differently. Workers were separated into undereducated, overeducated, and those whose education was consistent with the educational requirements of their current jobs. Another area which needed to be considered was the rate of job satisfaction within similar educational levels across occupations.

TABLE 5. PERCENTAGE OF WORKERS VERY SATISFIED WITH JOB BY EDUCATIONAL ATTAINMENT OF WORKER AND EDUCATIONAL REQUIREMENTS OF OCCUPATION[a]

Educational Attainment of Worker	Educational Requirements of Occupation					
	0-11 Years	12 Years	13-15 Years	16 Years	17+ Years	Total
0-11 Years	35.2% (25)	46.8% (73)	50.5% (54)	77.8% (14)	----	47.1% (166)
12 Years	27.7 (18)	37.5 (93)	52.4 (177)	57.7 (45)	75.0 (3)	45.8 (336)
13-15 Years	33.3 (5)	40.0 (50)	54.8 (120)	53.6 (59)	50.0 (3)	49.0 (237)
16 Years	50.0 (1)	39.5 (17)	46.7 (43)	55.3 (73)	63.1 (12)	50.7 (146)
17+ Years	----	33.3 (4)	61.2 (30)	48.5 (64)	58.8 (47)	52.9 (145)
Total	31.8 (49)	40.6 (237)	52.7 (424)	54.3 (255)	59.6 (65)	48.5 (1030)[b]
Overeducated	28.9	39.4	51.8	48.5	----	43.3
Not Overeducated	35.2	41.1	52.9	56.5	59.6	50.3
Difference	-6.3	-1.7	-1.1	-8.0	----	-7.0

[a] Ns in Parentheses represent workers responding "very satisfied" with job

[b] Total N = 2122

Table 6 shows the relationship between workers within both equivalent educational levels and occupations who stated they were "very satisfied" with their job. A rather different situation is evident when the three categories of workers are used because the undereducated were influencing the results when they were included as part of the not overeducated group. Educational attainment seems to have more impact on job satisfaction than categories of occupation. The difference in job satisfaction rates are calculated by comparing the overeducated with workers having the required education (see "consistent" category). Workers with the required education are the middle category, of the three categories, and thus the standard for comparison.

Within equivalent educational levels and occupations, the workers with the required education show increasing job satisfaction with increasing educational attainment levels. Within equivalent educational levels and occupations, the undereducated are more satisfied with their jobs than the overeducated or workers with the required education except for the middle level (13-15 years). The workers with 13-15 years of education, within equivalent educational levels, also show the greatest difference in job satisfaction between the overeducated and those with the required education. Job satisfaction within equivalent occupations changes slightly when the undereducated are treated as a separate category (see bottom line of Table 5). Analyzing the data is this way show the independent effects of education and occupation on job satisfaction.

TABLE 6. PERCENTAGE OF WORKERS VERY SATISFIED WITH JOB WITHIN EQUIVALENT EDUCATIONAL LEVELS AND OCCUPATIONS[a]

Educational Attainment & Educational Requirements of Occupation	Within Educational Levels			Difference Between Overeducated & Consistent	Within Occupational Categories			Difference Between Overeducated & Consistent
	Under-educated	Consistent	Over-educated		Under-educated	Consistent	Over-educated	
0-11 Years	50.2% (141)	35.2% (25)	----	----	----	35.2% (25)	28.9% (24)	-6.3
12 Years	53.8 (225)	37.5 (93)	27.7 (18)	-9.8	46.8 (73)	37.5 (93)	39.4 (71)	+1.9
13-15 Years	53.4 (62)	54.8 (120)	39.3 (55)	-15.5	51.9 (231)	54.8 (120)	51.8 (73)	-3.0
16 Years	63.1 (12)	55.3 (73)	44.5 (61)	-10.8	57.3 (118)	55.3 (73)	48.5 (64)	-6.8
17+ Years	----	58.8 (47)	50.5 (98)	-8.3	62.1 (18)	58.8 (47)	----	----

[a]Ns in Parentheses

Other studies have concluded that women receive more benefits from education and one of these benefits has been greater job satisfaction. Women also show higher rates of overeducation at the two highest educational levels (see Table 3, 16 years and 17+ years of education) so job satisfaction according to the sex of worker is presented in Table 7. The overall rate of "very satisfied" male and female workers is very similar--males 47.7 percent and females 49.6 percent.

The job satisfaction totals for males and females by educational levels are approximately the same, this is also true for occupational categories except for females at the highest occupational level (17+ years). Workers in equivalent occupations by sex are compared at the bottom of Table 7. Only approximately one-fourth of the overeducated males in the lowest occupational category are "very satisfied" with their jobs and are 11.3 less than "very satisfied" when compared to those workers with the required education in similar jobs. Overeducated males in occupations requiring 13-15 years of education have the greatest magnitude of difference in "very satisfied" with job compared to workers in similar occupations with the required education. Overeducated females are very close in job satisfaction to females with the required education in comparable jobs except at the college level where there is a negative 10.4 percent difference.

Larger negative differences in the "very satisfied" with job response by males and females within equivalent educational levels across occupational categories were found. Table 8 compares the undereducated, overeducated, and education consistent with job requirements for male and female workers who are "very satisfied" with their jobs within educational attainment levels.

TABLE 7. PERCENTAGE OF MALES AND FEMALES VERY SATISFIED WITH JOB BY EDUCATIONAL ATTAINMENT OF WORKER AND EDUCATIONAL REQUIREMENTS OF OCCUPATION[a]

Educational Attainment of Worker	Educational Requirements of Occupation: 0-Years		12 Years		13-15 Years		16 Years		17+ Years		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-11 Years	37.2 (16)	31.0 (9)	46.1 (41)	47.8 (32)	50.7 (35)	50.0 (19)	80.0 (8)	75.0 (6)	----	----	47.6 (100)	46.5 (66)
12 Years	22.2 (10)	40.0 (8)	36.8 (50)	38.4 (43)	47.9 (81)	56.1 (96)	64.9 (24)	51.2 (21)	66.7 (2)	100.0 (1)	42.8 (167)	49.3 (169)
13-15 Years	45.5 (5)	----	36.2 (25)	40.3 (25)	58.9 (63)	50.9 (57)	46.5 (27)	61.5 (32)	50.0 (32)	----	50.2 (123)	49.6 (114)
16 Years	----	100.0 (1)	46.0 (15)	18.2 (2)	45.4 (20)	47.9 (23)	53.1 (43)	58.8 (30)	56.2 (9)	100.0 (3)	50.0 (87)	51.8 (59)
17+ Years	----	----	37.5 (3)	25.0 (1)	57.1 (16)	66.7 (14)	48.6 (34)	48.4 (30)	58.2 (39)	61.5 (8)	52.9 (92)	53.0 (53)
Total	31.0 (31)	33.3 (18)	40.9 (134)	40.2 (103)	51.6 (215)	53.8 (209)	53.1 (136)	55.6 (119)	57.6 (53)	70.6 (12)	47.7 (569)	49.6 (461)
Undereducated	----	----	46.1	47.8	48.7	55.6	56.2	55.1	56.0	100.0	50.3	54.5
Consistent	37.2	31.0	36.8	38.4	58.9	50.9	53.1	58.8	58.2	61.5	46.6	46.4
Overeducated	25.9	36.0	41.8	36.4	47.4	53.6	48.6	48.4	----	----	41.4	44.6
Difference Between Overeducated & Consistent	-11.3	+5.0	+5.0	-2.0	-12.5	+2.7	-4.5	-10.4	----	----	-5.2	-1.8

[a] Ns in Parentheses represent workers responding "very satisfied" with job

TABLE 8. PERCENTAGE OF MALE AND FEMALE WORKERS VERY SATISFIED WITH JOB WITHIN EQUIVALENT EDUCATIONAL ATTAINMENT LEVELS ACCORDING TO OCCUPATIONAL REQUIREMENTS[a]

Relationship Between Educational Attainment & Requirements of Occupation	Educational Attainment & Requirements of Occupation	Sex: Male	Difference Between Overeducated and Consistent	Sex: Female	Difference Between Overeducated and Consistent
Undereducated		50.0% (84)		50.4% (57)	
	0-11 Years		-----		-----
Consistent		37.2 (16)		31.0 (9)	
Undereducated		51.2 (107)		55.9 (118)	
Consistent	12 Years	36.8 (50)	-14.6	38.4 (43)	+1.6
Overeducated		22.2 (10)		40.0 (8)	
Undereducated		47.9 (30)		61.5 (32)	
Consistent	13-15 Years	58.9 (63)	-11.4	50.9 (57)	-13.0
Overeducated		37.5 (30)		37.9 (25)	
Undereducated		56.2 (9)		100.0 (3)	
Consistent	16 Years	53.1 (43)	-7.6	58.8 (30)	-15.5
Overeducated		45.5 (35)		43.3 (26)	
Consistent		58.2 (39)	-8.9	61.5 (8)	-9.8
	17+ Years				
Overeducated		49.3 (53)		51.7 (45)	

[a] Ns in parentheses

The findings in Table 8 lend further support for Burris's (1983) conclusion that high school males who are overeducated enter unskilled or semi-skilled occupations where generally job satisfaction would not be high. Overeducated males with a high school education show the least job satisfaction of any category of workers. Overeducated females show about the same degree of job satisfaction as males, with more than 12 years of education, but show considerably less satisfaction than both undereducated and consistent females within equivalent educational attainment levels. This possibly lends support for the notion that males and females expect either different outcomes from their education or occupational rewards or some combination of these two. The trend of job satisfaction is generally the same for both males and females. Generally, the overeducated are less satisfied with their jobs than workers whose education is consistent with job requirements. The undereducated show more job satisfaction than either the overeducated or those with the required education.

The second method used to determine the effects of overeducation on the dependent variable of job satisfaction was through the calculation of the best-fitting regression equation. Dummy variables were used for each level of education and occupation as independent variables. The highest occupation and level of education was the reference category and excluded from the regression. The responses to the dependent variable--"On the whole, how satisfied are you with the work you do?" were recoded--1 for very dissatisfied, 2 for a little dissatisfied, 3 for moderately satisfied, and 4 for very satisfied and then multiplied by 10 to enlarge the residuals. Treating the dependent variable as an interval measure means the results must be interpreted with caution. The mean of the dependent variable was used as the raw data within

each of the 25 cells (combination of each of the five educational attainment levels and five levels of educational requirements of occupations) needed to be treated as one case. The deviations (residuals) from the predicted scores were used to infer the impact of overeducation on job satisfaction rates. The residuals are presented in Table 9 where the size and direction can be interpreted as a measure of the interaction effects of education and occupation on worker job satisfaction levels (Jackson and Burke, 1965; Burris, 1983).

TABLE 9. OBSERVED AND RESIDUAL MEAN OF JOB SATISFACTION BY EDUCATIONAL ATTAINMENT OF WORKER AND EDUCATIONAL REQUIREMENTS OF OCCUPATION: ADDITIVE MODEL[a]

Educational Attainment of Worker	Educational Requirements of Occupation				
	0-11 years	12 years	13-15 years	16 years	17+ years
0-11 Years	30.42 -0.81 (71)	32.69 0.29 (156)	32.90 -1.49 (107)	37.22 2.00 (18)	--
12 Years	29.38 -1.69 (56)	31.65 -0.60 (248)	34.11 -0.12 (338)	35.26 0.19 (78)	37.50 2.22 (4)
13-15 Years	29.33 -0.36 (15)	31.76 0.90 (125)	33.93 1.08 (219)	34.27 0.59 (110)	31.67 -2.22 (6)
16 Years	35.00 3.61 (2)	31.40 -1.16 (43)	33.48 -1.06 (92)	33.19 -1.59 (132)	35.79 0.20 (19)
17+ Years	30.00 -0.76 (1)	32.50 0.57 (12)	35.51 1.59 (49)	33.56 -1.19 (132)	34.75 -0.21 (80)

[a] The first entry in each cell is the observed mean. The second entry is the residual from the best - fitting regression equation. Ns are given in parentheses.

Total N = 2122

There is no clear pattern evident in the size or direction of residuals from the observed job satisfaction rates and predicted level of job satisfaction from the best-fitting regression equation using education and occupation as independent variables. It was expected that high positive residuals would be found in the upper right-hand corner of the table showing higher levels of job satisfaction for undereducated workers. This is only found for those workers undereducated by 3 GED levels. Those undereducated by 2 GED levels show some of the highest negative residuals, -1.49 and -2.22. All the workers whose education is consistent with occupational requirements have negative residuals except for those workers with 13-15 years of education (see middle diagonal from upper left-hand corner to lower right-hand corner). The college educated workers requiring 16 years of education have one of the highest negative residuals, -1.59. Workers overeducated by 3 GED levels have positive residuals, those by 2 GED levels have both positive and negative residuals. Those workers who are overeducated by a single GED level have mostly negative residuals of some magnitude. Of the 10 cells to the left of the middle diagonal--representing the overeducated worker--6 of them have negative residuals. One interesting trend is that overeducated workers who have completed their education (12 years and 16 years) have some of the largest negative residuals. According to the results of the best-fitting regression model, overeducation does seem to be a factor in job satisfaction.

SUMMARY AND CONCLUSIONS

The initial area considered was how the distribution of workers according to educational attainment and educational requirements of occupations had changed since the Burris 1977-78 survey (see Tables 2 & 3). In the present study there were fewer workers in occupations requiring a high school diploma or less while the increase in occupational categories had been

in the occupations requiring 13-15 years of education rather than the higher level occupations. This is important because the increase in educational attainment of workers had been primarily at the college and post graduate levels. The reasons for the increase in percentage of workers in occupations requiring 13-15 years of education are: 1) the number of high school graduates in these jobs who are undereducated; 2) the increase in college graduates and post graduate workers in these jobs who are consequently overeducated; and, 3) the overall increase in workers with some college working in these jobs where their education is consistent with occupational requirements.

The 1977-78 survey (Burris, 1983) showed the greatest concentration of overeducated workers to be those with 13-15 years of education. Prior to this, college graduates had been the focal point of the literature on overeducation. This study found a direct relationship between the amount of education and overeducation with approximately one-half of the college educated workers being overeducated for their current jobs. The one finding which probably kept the overall rate of overeducation from being much higher than it was can be attributed to the number of high school graduates who are undereducated for their jobs. The undereducated have been briefly referred to in other studies. Duncan and Hoffman (1981) using self-reported levels of education required by the respondents' occupation in 1976 found that approximately 12 percent were undereducated for their jobs. Most of the 12 percent were individuals in jobs whose requirements had inflated since they began working or workers who failed to graduate from high school currently in jobs that required a high school diploma. Rumberger (1981) found workers with less than 12 years of education being undereducated for their jobs. The

percent of overeducated workers in this study was 25.2 which was an increase of 3.5 percent over the 1977-78 rate (Burris, 1983).

The distribution of overeducated were then analyzed according to sex, race, class background, and age. The overall rate of overeducation by sex and race was very close but higher for middle class and workers 35 and under years of age. The rates of overeducation found when viewed by sex, race, class background, and age were that workers with a college education or higher had the highest rates of overeducation. This study was then compared to the 1977-78 survey to determine if there had been any changes in the composition of the overeducated by sex, race, class background, and age level. At the two lowest levels of educational attainment (12 years and 13-15 years), where there can be overeducated workers, there was a decrease in percentages of overeducated in every category except for middle class workers where there was a small increase. College educated females, blacks, workers from middle class backgrounds and younger workers (35 and under) showed an increase of at least 20 percentage points in overeducated workers from the 1977-78 survey. These findings would seem to support the concept that as more people attain higher levels of education the number of overeducated will continue to increase.

The hypothesis explored in this study was: "Overeducated workers will be less satisfied with their jobs than workers who are not overeducated." A comparison of the data from 1977-78 with the 1984-86 reveals that there has been a four percent decrease in overeducated workers who are "very satisfied" with their jobs. However, two striking changes had occurred when comparing the overeducated within occupational categories from the two surveys. Overeducated workers in occupations requiring 0-11 years of education reporting they were "very satisfied" showed a decrease of 12.1

percent in the present study and for occupations requiring 16 years of education there was a decrease of 12.0 percent. At this point, it seemed that comparisons between the 1977-78 study and the present study could be misleading because of the high percent of undereducated in this study and the fact that workers in equivalent occupations were compared in 1977-78 but workers within equivalent educational levels were not considered. The present study differed from the 1977-78 Burris (1983) study and comparisons in some areas of job satisfaction were not possible.

When workers were categorized according to overeducated, undereducated, and those with the required educational level for work and compared, within equivalent occupations and educational levels, the trend was basically that job satisfaction increases at higher occupations and educational levels. Overeducated workers within equivalent educational levels compared with workers having the required education showed lower job satisfaction rates of a greater magnitude than was found within equivalent occupations. This would seem to indicate that higher levels of education result in less job satisfaction for the overeducated when compared with similarily educated workers regardless of occupation.

The 1977-78 Burris study (1983) had found that extreme levels of overeducation had an impact on job satisfaction levels but that slight overeducation (by a single GED level) showed little effect. The present study showed that slight overeducation resulted in lower job satisfaction levels than extreme levels of overeducation.

Males and females across educational levels and occupations showed about the same levels of job satisfaction. Females with graduate education in jobs requiring a college degree showed 10 percent less job satisfaction than females with the required education. This group was overeducated by a single

GED level and could also be contributing to this study finding less job satisfaction for the slightly overeducated.

Overall, approximately one-half of the overeducated workers were "very satisfied" with their jobs when compared by percentages. The best-fitting regression equation was calculated in order to control for the independent effects of occupation and education. The residuals were examined for magnitude and direction. High negative residuals would have indicated that actual job satisfaction was not as great as predicted by the regression model. High negative residuals were expected for the overeducated, high positive residuals were expected for the undereducated and small residuals of either sign for those workers with the required education. Most of the negative residuals were for the overeducated with those of the larger magnitude being for workers who were overeducated by a single GED level. When viewing job satisfaction by educational attainment, the workers with 16 years of education had three high negative residuals and the highest positive residual for any category of workers. The negative residuals would seem to indicate that college educated workers are not receiving a high level of satisfaction from their jobs. The highest positive residual was for workers with 16 years of education employed in the lowest occupational category. A possible explanation for this finding is that these workers chose to work in these jobs for personal reasons rather than the fact that these were the only jobs available. It should also be noted that there were only two workers in this cell and therefore, if one of these does not follow the expected trend there is a large impact on the outcome for this cell. While the results of the best-fitting regression model did not follow exactly the expected pattern there was support for overeducation being a contributing factor to job dissatisfaction.

Certain patterns and trends became evident in the results of this study. There is a direct relationship between overeducation and educational attainment. The higher the level of education the greater the number of overeducated workers. The greatest increase in overeducated workers since the Burris (1983) study, using 1977-78 data, has been in the college educated. Unless there is an upgrading of job skills, there is no reason not to expect this trend to continue.

When considering worker attitudes, the categories of overeducated and not overeducated are not representative of the actual composition of the work force. Three categories of worker status is a closer approximation of reality and these would be: undereducated, workers with education consistent with job requirements, and overeducated.

When looking at the overeducated within equivalent occupations and equivalent educational levels, education has more of an impact on worker attitudes than occupational category. In other words, there is not as much difference in attitudes between overeducated workers and those with the required education when they are in equivalent occupational categories as is found when compared with workers of the same educational attainment level. This could be because the occupational groups is the worker's reference group resulting in a similarity of attitudes.

When regression is used as a means of controlling for the direct effects of education and occupation operating independently of one another, several patterns emerge. For the most part, those workers who are overeducated by one GED level have the expected attitudes while those with extreme levels of overeducation do not. There is the possibility that there are two types of workers who are extremely overeducated, those who choose to be and those who have no choice. If this is true, it would explain why those workers with

extreme levels of overeducation do not follow the expected pattern. The other trend evident with the regression model is that generally the college educated worker, regardless of occupational requirements, tend to follow the pattern expected of the overeducated. These findings seem to indicate that as more college graduates enter the work force, even if they are not overeducated for their job, we may find more job dissatisfaction and negative attitudes toward education.

Educational reform has been offered as a solution to economic growth and increased productivity. If we accept that GED levels reflect the necessary knowledge and skills required for job performance and educational levels can be converted into GED levels, then increasing education will not solve economic problems. A possible problem with the use of GED levels is that these were assigned to jobs in the early 70's If jobs have been upgraded since that time then the GED, though widely used, may be contributing to the rates of overeducation. The number of undereducated workers found in this research may be the group of workers that business refers to when they are critical of the educational background of workers. However, there is no evidence to support the concept that the undereducated are not promoted within their jobs until they reach a level where their educational attainment is less than required for the job. This of course in no way means they have not learned the necessary skills on the job to perform the job adequately. Duncan and Hoffman (1981) found that individuals with the greatest job tenure were more likley to report having less education than their job required. This supports the idea of competency being acquired through experience and that promotions result in the undereducated status. However, it is also highly possible that these workers could not find a similar job with another employer.

Previous research has found that there is a salary disadvantage for both the undereducated and the overeducated when compared with the salaries of workers who have the required education. Duncan and Hoffman (1981) found that wages for underqualified males were between four and five percent less than otherwise similar men, including those with the same required level of education. In the same study, overeducated workers received higher wages for surplus education but at approximately one-half the rate of required education (Duncan and Hoffman, 1981). Rumberger (1985) found the returns to surplus education to be almost half as large as the estimated returns to required schooling. Rumberger (1985) concluded that, "schooling in excess of that required by a worker's job may be underutilized and therefore rewarded less than the schooling actually required and fully utilized" (p. 9). If we accept the human capital explanation that, "education and earnings are directly proportional to individual productivity on the job" (Rumberger, 1985, p. 13), then productivity of both the undereducated and the overeducated could be less than anticipated. The productivity of undereducated workers will be less than workers with the required education and the overeducated workers, while not wholly unproductive, will not be completely utilizing their education proportionally to the amount of excess education. Tsang (1984) points out that the problem of underutilization of education in the U.S. might be a significant factor in what appears to be the long-term decline in productivity in the U.S. economy. Levin (1984) states that there is evidence to suggest that expansion of work roles which will increase worker participation and discretion in order to take advantage of capabilities among more educated workers is likely to be associated with higher worker productivity. This is to say that the solution to the economic problem of productivity must be in redesigning the work place not in redesigning education. Quinn and

Mandilovitch (1975) challenged employers to re-examine the educational requirements of jobs and base these requirements on skills acquired rather than diplomas obtained.

With the present number of overeducated workers, a trend that seems likely to continue, marching to the "battle cry of more education for a better job," could intensify problems for education. "Individuals might reconsider their investment in education and may invest their resources elsewhere for a higher rate of return. This affects the demand for schooling" (Tsang, 1984, pp. 16-17). There may be changes necessary to improve education but these changes should be for the betterment of educational techniques for more effective student learning not to solve economic concerns.

Ann Bastian (1988) states "the growing gap between school and work--between educational aspirations and employment realities--is a crucial influence lowering expectations, achievement, and democratic values in public education today" (p. 29). The gap between work and school is defined as the rate of youth unemployment and job growth in mainly low-skill and low-wage sectors of the job market at a time when more people are receiving higher levels of education. These conditions mean that, "schools are increasingly hard-pressed to motivate any large portion of their students through career aspiration or the work ethic" (Bastian, 1988, p. 30). Bastian feels that expectations of students and teachers can be raised if the bottom-line for schooling is empowerment, not employment. Therefore, education should prepare students "to apply knowledge, to solve problems, to make choices, and to participate in setting priorities" (Bastian, 1988, p. 31). While these are necessary skills for people to lead productive lives they are also necessary to survive in the world of work (Bastian, 1988).

The functionalist and conflict theorists propose different relationships and outcomes between education and the economy. The functionalists see social and economic equality coming about through equal opportunity to education and increasing levels of education. The conflict theorists see education as a reflection of a society where the economic system is structured to maintain inequality. More people are acquiring higher levels of education and yet incomes and social mobility are not moving in the direction of more equality. This would tend to support conflict theory rather than functionalism. From an economic point of view, the evidence of overeducation presented in this study would also be more supportive of conflict theory and the dual labor market concept.

In conclusion, this author feels that education cannot be blamed for all the problems in this country nor can education be expected to solve all of the existing problems. Individuals must be encouraged to pursue education for personal growth and development and thus societal institutions will reap the benefits from an enlightened citizenry. Education cannot be used as a scapegoat for economic problems. This is not to say that schools should not or do not serve the interests of the economy but rather this cannot be the primary goal. The term "overeducation" seems to place the blame for economic conditions on the educational system and thus we need to start considering "underemployment" or "underutilization of the work force" so that the emphasis for a solution is placed where it belongs--on the economy.

APPENDIX A

GED Levels and Equivalent Years of Schooling

GED Level II	Equivalent Years of Schooling Conversion I	Conversion
1	0- 4	0- 3
2	5- 7	4- 6
3	8-10	7- 8
4	11-12	9-12
5	13-16	13-14
6	17-18	15-16

Sources: Eckaus (1964); U.S., Department of Labor (1971).

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